

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Tulane NPRC - Bp - Removal Polrep  
Initial and Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VI

**Subject:** POLREP #1  
FINAL  
Tulane NPRC - Bp

Covington, LA  
Latitude: 30.4417073 Longitude: -90.1100287

**To:** Ronnie Crossland, EPA R6 Superfund  
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**From:** John Martin, OSC  
**Date:** 5/13/2015  
**Reporting Period:** 02/05/2015 - 02/13/2015

## 1. Introduction

### 1.1 Background

|                            |           |                                |                    |
|----------------------------|-----------|--------------------------------|--------------------|
| <b>Site Number:</b>        | A6KY      | <b>Contract Number:</b>        | EP-W-06-042        |
| <b>D.O. Number:</b>        |           | <b>Action Memo Date:</b>       |                    |
| <b>Response Authority:</b> | CERCLA    | <b>Response Type:</b>          | PRP Oversight      |
| <b>Response Lead:</b>      | PRP       | <b>Incident Category:</b>      | Removal Assessment |
| <b>NPL Status:</b>         | Non NPL   | <b>Operable Unit:</b>          |                    |
| <b>Mobilization Date:</b>  | 2/2/2015  | <b>Start Date:</b>             | 2/2/2015           |
| <b>Demob Date:</b>         | 2/13/2015 | <b>Completion Date:</b>        | 6/21/2015          |
| <b>CERCLIS ID:</b>         |           | <b>RCRIS ID:</b>               |                    |
| <b>ERNS No.:</b>           |           | <b>State Notification:</b>     |                    |
| <b>FPN#:</b>               |           | <b>Reimbursable Account #:</b> |                    |

On 28 January 2015, the U.S. Centers for Disease Control and Prevention (CDC) requested assistance from EPA Region 6 during a biological response related to *Burkholderia pseudomallei* (*B. pseudomallei*) at the Tulane National Primate Research Center (TNPRC). The CDC sought guidance with environmental sampling and decontamination for potentially impacted areas from EPA Region 6.

OSC Martin mobilized to the St. Tammany Parish Emergency Operations Center on 2 February 2015 along with a member from the EPA Region 6 Superfund Technical Assessment and Response Team (START-3) contractor, Weston Solutions, Inc. In addition, Ms. Canzler, Director of the EPA CBRN Consequence Management Advisory Division (CMAD) mobilized to the site on 3 February 2015.

**1.1.1 Incident Category:** The Tulane National Primate Research Center (TNPRC) is one of eight centers that make up the National Primate Research Center Program funded by the National Institutes of Health (NIH).

### 1.1.2 Site Description

**1.1.2.1 Location:** The Tulane National Primate Research Center, situated on 500 acres of land located at 18703 Three Rivers Rd in Covington, St. Tammany Parish, Louisiana (Latitude 30.441707° North and Longitude 90.110028° West).

**1.1.2.2 Description of Threat:** In November 2014, two nonhuman primates (IL38 and ID22) housed at the TNPRC breeding colony were presented to the facility veterinary hospital with nonspecific clinical signs. After clinical workups, including exploratory surgeries, bacterial cultures, and assistance from the CDC, it was determined the two nonhuman primates were infected with the bacteria *B. pseudomallei*, which causes the disease melioidosis in humans and animals. *B. pseudomallei* was the subject of research at the TNPRC select agent laboratory, but is not endemic in the United States. One of the nonhuman primates (IL38) was euthanized on 26 November 2014, and the remaining nonhuman primate (ID22) was euthanized on 19 February 2015.

On 18 December 2015, in accordance with federal research protocols, TNPRC personnel submitted an Animal and Plant Health Inspection Service (APHIS)/CDC Form 3 (Report of Theft, Loss, or Release of Select Agents and Toxins), to notify the Federal Select Agent Program (FSAP) of the CDC of the potential release of *B. pseudomallei*. Since *B. pseudomallei* is a Tier 1 Select Agent and not considered within containment at TNPRC, a joint investigation was initiated in January 2015 by the CDC and the U.S. Department of Agriculture (USDA). As part of the investigation conducted from 20 through 24 January 2015, federal and state scientists visited TNPRC and conducted an epidemiological study and reviewed laboratory practices to determine possible routes of transmission. The source of the infection was not identified during the joint investigation. Therefore on January 28, CDC requested assistance from EPA.

### 1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results:

After several daily

briefings regarding the incident and site actions to be taken, EPA activated additional START-3 resources to the site on 5 February 2015 to coordinate the collection and analysis of environmental samples, to provide technical support, and to compile photographic and written documentation of site activities. During assessment activities, the EPA Team documented sampling activities of 42 soil, 15 water, 12 air, and 12 swab samples. The samples were submitted for analyses to the CDC laboratory in Atlanta, Georgia, and the Georgia Public Health Laboratory in Decatur, Georgia. Analytical results reported *B. pseudomallei* was not detected in any of the environmental samples taken.

## 2. Current Activities

### 2.1 Operations Section

**2.1.1 Narrative:** The EPA Team began onsite activities on 2 February 2015. Daily situation briefings were conducted at the St. Tammany Parish Emergency Operations Center (EOC) with numerous local, state and federal agencies in attendance. They quickly formed a Unified Command consisting of CDC, GOHSEP, LA DHH and St Tammany as the command. EPA's role was as an Assisting Agency which supported CDC.

During the morning meeting of 5 February 2015, the EPA Team briefed GOHSEP that a Technical Working Group, including the EPA Office of Research and Development National Homeland Security Research Center, was convened to determine air, soil, and water sampling strategies for the incident. The EPA Team proposed a tentative sampling schedule to GOSHEP; the priority was collection of water samples downstream of the enclosures in conjunction with the deployment of Portable Sampling Units (PSUs) to collect air samples. However, GOHSEP representatives stated they were seeking immediate aggressive response actions from participating federal agencies, and requested a Sampling and Analysis Plan (SAP) from the EPA Team to be presented the next morning meeting. In addition to the sampling plan, GOHSEP also requested the EPA Team prepare decontamination options for the two field enclosures that may have been contaminated by the infected nonhuman primates.

After presenting the SAP and decontamination options the morning of 6 February 2015, the EPA Team participated in a site visit to the main TNPRC administration building and discussed sampling options and health and safety requirements at the TNPRC breeding colony. The TNPRC required any personnel working within 10 feet of nonhuman primate enclosures to have a tuberculin skin test; the EPA Team complied with the requirement. A TNPRC-supplied site map was reviewed with the facility's Environmental Health and Safety Specialist to locate wastewater flow and outfalls. Particular attention was given to wastewater flow and outfalls as a potential pathway for *B. pseudomallei* to enter the environment. The site visit concluded with a tour of the breeding colony and the two field enclosures that housed the two infected nonhuman primates.

At the 6 February 2015 strategies meeting held at the St. Tammany Parish Emergency Operations Center (EOC), the EPA Team presented the EPA recommended strategies for sampling and decontamination. The EPA data quality objective (DQO) process was utilized as part of the planning process to propose the type, quantity, and quality of data needed for decision making. The environmental objectives of the plan were to determine if *B. pseudomallei* had breached engineering controls and become established in the environment outside of the TNPRC facility, specifically, areas adjacent to the infected nonhuman primate field enclosures, retention ponds, and two on-site outfalls. The plan outlined targeted grab sample collections from locations determined by the on-site EPA Team., employing an authoritative, non-probabilistic (biased) sampling design. Biased sampling is commonly conducted in the early stages of a site assessment when little preliminary data exist, and the site is screened to determine if a further assessment or response action is warranted. Probabilistic (systematic grid) sampling was not conducted due to CDC laboratory capabilities. The CDC laboratory stated they were capable of analyzing approximately 16 samples (air and water) during the proposed sampling schedule of 7 and 8 February 2015 due to limited supplies of reagents. Once stocked with reagents, the CDC estimated their laboratory could process approximately 50 samples per day, with an estimated 5- to 7-day turnaround time.

The Sampling Operating Procedure (SOP) for naturally occurring *B. pseudomallei* in the soils of Southeast Asia specifies a sample depth of 30 centimeters (11.811 inches) below ground surface (bgs). For this response, the possible release into the environment of *B. pseudomallei* was believed to be runoff of waste products from the nonhuman primate field enclosures that could have been deposited onto the top of the soil or sediment; therefore, samples for soil and sediment would be collected in the top 2 to 3 inches of soil as proposed to Unified Command.

In accordance with the SOP, samples were analyzed for *B. pseudomallei* by polymerized chain reaction (PCR) and culturing. PCR looks for the organism whether dead or alive by detecting its genetic material (DNA), culturing would grow any live organisms. If *B. pseudomallei* were detected by either PCR or culturing, then the sample would have been considered contaminated.

Decontamination strategies presented by the EPA Team for the nonhuman primate field enclosures included two options. The first option was the use of methyl bromide (MeBr), which is used as a soil fumigant and structural fumigant; the second option was excavation of the top foot of soil, followed by autoclave treatment of soil. Soil decontamination recommendations for areas with positive analytical results for *B. pseudomallei* would have been determinant on locations, decontamination costs, timeline for completion, and protection of public health.

If analytical results for water samples reported positive for *B. pseudomallei*, a determination of residence time in the chlorine contact chambers of the facility's wastewater treatment process would have been necessary to determine the amount of chlorine needed to achieve a CT (concentration x time) value for adequate inactivation of the bacteria. Wastewater from the administration buildings flows from the facility's lift station, south to the aeration pond in the breeding colony. From the aeration pond, the wastewater flows southwest to the constructed wetlands as part of a natural filtration process. After flowing through the constructed wetlands, the wastewater passes through a rock filter, and then enters contact chambers for chlorination prior to discharge from the property through Outfall 003.

The Quality Assurance Sampling Plan (QASP) developed by the EPA Team described the proposed field investigation activities, sampling, and analytical scope of work to be conducted as part of the initial response. The EPA Team responsibilities included coordinating the collection and analyses of environmental samples; however, personnel from TNPRC were tasked to collect the on-site soil and water samples, while collection of air and swab samples was the responsibility of the EPA Team. The EPA Team provided the TNPRC Team training on taking environmental samples and provided oversight of the sampling activities.

## **2.1.2 Response Actions to Date**

### **Air Sampling**

On 7 February 2015, the EPA Logistics Response Vehicle (LRV-2) arrived on-site as a mobile office to support the incident. In addition to the arrival of the LRV-2, three Portable Sampling Units (PSUs) for air sample collection were delivered. The three PSUs were obtained from the Department of Homeland Security (DHS) BioWatch Program and are aerosol monitors used to detect biological pathogens. The PSUs draw in air and pass it through a filter, which is manually collected at 24-hour intervals. An inventory of the sampling media and a safety briefing was conducted with the on-site personnel by the EPA Team.

On 8 February 2015, the three PSUs were strategically stationed at various locations, whose geographic coordinates were obtained using a GPS, and the first 24-hour sampling run was initiated. After soil sampling operations were completed on 11 February 2015, PSU 340, located downwind of the nonhuman primate field enclosures at the chlorinated contact basin, was shut down and relocated to the facility building in the north campus.

Once the air samples were collected on 12 February 2015 by the EPA Team, the three PSUs were shut down and decontaminated with chlorinated wipes. Once the PSUs were decontaminated, swab samples were collected for confirmation purposes before the PSUs were returned to the Department of Homeland Security (DHS) BioWatch Program.

Air samples were collected from the three PSUs approximately every 24 hours during the four days of initial sampling activities. The CDC laboratory in Atlanta, Georgia did not have the capability to analyze the air filter samples collected from the PSUs. Therefore, the air samples were forwarded to the Georgia Public Health Laboratory in Decatur, Georgia for analyses. The 12 air filter samples received by the laboratory were reported to be non-reactive to DNA agents tested (BioWatch Screening Panel), including *B. pseudomallei*.

### **Water Sampling**

On 8 February 2015, the EPA Team conducted sample collection training for the TNPRC personnel tasked with sampling activities based on the EPA Environmental Response Team (ERT) surface water sampling SOP.

On 9 February 2015, water sampling operations were initiated from 12 locations determined by the EPA Team, and included the collection of one field blank and one duplicate, for a total of 14 samples (2 1-liter amber bottles per sample). Sample collection began from the southernmost area of the TNPRC breeding colony at Pond 9, which serves as the site's stormwater overflow pond, and then continued north sampling the primary stormwater pond (Pond 8), the two on-site outfalls (Outfall 003 and Outfall 004), chlorinated contact basin, rock filter, constructed wetlands, areas adjacent to the infected nonhuman primate field enclosures, and the aeration pond.

On 12 February 2015, a single wastewater sample was collected by the TNPRC Team from the facility wastewater lift station, as recommended by Unified Command. The lift station moves wastewater from the administrative buildings, including the veterinary hospital and the TNPRC select agent laboratory, south to the aeration pond in the breeding colony.

The TNPRC Team collected a total of 15 water samples that were submitted on 9 and 12 February 2015 for analyses to the CDC laboratory in Atlanta, Georgia. Water samples were collected in accordance with EPA ERT surface water sampling SOPs. The 15 water samples submitted to the laboratory for analytical testing reported nondetect for *B. pseudomallei*.

### **Soil Sampling**

On 10 February 2015, the EPA Team conducted sample collection training based on the EPA ERT soil sampling SOP for the TNPRC Team tasked with soil sampling activities. After the training, samples were collected from 32 locations, determined by the EPA Team, and included the collection of three duplicate samples for a total of 35 samples submitted for analyses to the CDC laboratory in Atlanta, Georgia. Samples were collected from approximately 2 to 3 inches bgs in accordance with EPA ERT soil sampling SOP.

On 11 February 2015, the TNPRC Team collected soil samples from the two field enclosures that had housed the two original infected nonhuman primates. Enclosure R24 has a gravel base estimated by TNPRC to be approximately 5 feet in depth, which contained three nonhuman primates. Soil shakings were collected from gravel collected from beneath perches that were likely to have contamination from runoff of waste products from the nonhuman primate. One composite sample was collected for analyses.

Soil samples were then collected from the field enclosure by the TNPRC Team, which contained approximately 40 nonhuman primates. Two composite soil samples, one gathered from under four perches and one away from perches, were collected approximately 2 to 3 inches bgs. Two grab samples, one gathered from under four perches and one away from perches, were collected approximately 2 to 3 feet bgs.

On 12 February 2015, two soil samples was collected by TNPRC personnel, determined by the EPA Team, in the north campus where vehicles were staged and utilized to transport nonhuman primates from the breeding colony to the veterinary hospital. The samples were collected from approximately 2 to 3 inches bgs in accordance with the soil sampling SOP. The results of the 42 soil sample analyses reported that *B. pseudomallei* was not detected in any of the samples.

### **Swab Sampling**

On 12 February 2015, swab samples were collected by the EPA Team utilizing sterile wipe environmental sample collection procedures from two transport vehicles. Two TNPRC vans (Van 1 and Van 2) are utilized to transport nonhuman primates from the breeding colony to the veterinary hospital. Swab samples from Van 1 were collected from the dashboard, front of cargo holding area, middle of cargo holding area, and rear of cargo holding area, for a total of four swab samples. Swab samples from Van 2 were collected from the dashboard and cargo holding area, for a total of two swab samples.

Including the six swab samples taken from the PSUs, a total of 12 swab samples were submitted to the CDC laboratory in Atlanta for PCR and time-resolved fluorescence (TRF) analysis. The results of the swab sample analyses reported that *B. pseudomallei* was not detected in any of the samples.

## **2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs): Tulane National Primate Research Center (TNPRC) is the PRP.**

**2.1.4 Progress Metrics:** All the facilities' waste streams are disinfected and/or treated onsite. The solid wastes generated during the assessment activities including the Personnel Protective Equipment (PPE) were disposed onsite utilizing TNPRC's chemical autoclave unit.

## **2.2 Planning Section**

Based upon the sample results from the EPA Team and the TNPRC Team sampling activities, EPA's role as an Assisting Agency to support the initial assessment activities were concluded and transitioned to more of a roll of Cooperating Agency. For further activities including both short-term and long-term assessment, the UC will direct the PRP, TNPRC, to conduct the activities necessary to protect the public health, site workers and the environment.

## **2.3 Logistics Section**

N/A

## **2.4 Finance Section**

N/A

## **2.5 Other Command Staff**

N/A

## **3. Participating Entities**

U.S. Environmental Protection Agency (EPA)  
U.S. Centers for Disease Control and Prevention (CDC)  
U.S. Department of Agriculture (USDA)  
Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)  
Louisiana Department of Health and Hospitals (LDHH)  
Louisiana Department of Environmental Quality (LDEQ)  
Louisiana Department of Agriculture and Forestry (LDAF)  
Louisiana Department of Wildlife and Fisheries (LDWF)  
St. Tammany Parish Office of Homeland Security and Emergency Preparedness (STPGOV)  
Tulane Primate Center

## **4. Personnel On Site**

EPA OSC - 3  
EPA CMAD - 2  
START-3 - 4

## **5. Definition of Terms**

CDC – U.S. Centers for Disease Control and Prevention  
CBRN - Chemical, Biological, Radiological, and Nuclear  
CMAD - CBRN Consequence Management Advisory Division  
EOC – Emergency Operation Center  
EPA – Environmental Protection Agency  
GOHSEP – Louisiana Governor's Office of Homeland Security and Emergency Preparedness  
LDNR – Louisiana Department of Natural Resources  
LRV – Logistics Response Vehicle  
OSC – On-Scene Coordinator  
PRP – Potentially Responsible Parties

## **6. Additional sources of information**

For additional information, please refer to [www.epaosc.org/TNPRC](http://www.epaosc.org/TNPRC)

## **7. Situational Reference Materials**

For additional information, please refer to "Documents" on [www.epaosc.org/TNPRC](http://www.epaosc.org/TNPRC).